Public sector enterprise resource planning

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Abstract
The management of the US Department of Defense (DoD) enterprise must change. Years of under-funding have led to a wide gap between enterprise support requirements and resources. Private sector firms have faced similar choices. This paper shows how the public enterprise can be changed. Our hypothesis is that private sector implementations of standard software will lead to increased effectiveness and efficiency in public sector organizations. Sufficient detail is provided on how to transition to a modern integrated public sector enterprise, and the steps for implementing such a project are outlined, following standard private sector implementation practices. To explain the problem and solution, the DoD installation management enterprise is used as an example.

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1. Introduction

The Department of Defense (DoD) enterprise is large and complex. The largest business process is manage defense acquisition, with manage defense installations being second. However, the two processes are different in structure. For example, the execution of acquisition functions is unique, with no comparable private sector business process. Other business processes, including manage defense installations, are not particularly unusual, with functions that have direct analogies to those in the private sector.

We assert that the DoD will eventually change the way that it manages the non-unique business processes. The declining resource base will not support the existing infrastructure but, even if resources were plentiful, there would still be strong incentives to change. New IT-enabled process management methodologies have been implemented world-wide, and organizations are achieving enhanced efficiency and effectiveness through the use of these new management approaches. Since 2000, these new approaches have been spreading to the public sector, and the DoD is an early implementer and a leader for other public organizations.

Appropriate models and systems have been implemented in the private sector, and we argue throughout this paper that the DoD can learn from these private sector experiences. Private sector implementations have led to competitive advantage, better management control, and cost reductions. While DoD incentives and performance measures are different from the private sector, better management control and cost reductions are certainly public sector objectives.

We describe in detail how private sector organizations are integrating their business processes, and we draw comparisons with the DoD experience. We describe a public sector management model that is consistent with private sector models, and we demonstrate how the model should be implemented. The discussion covers all aspects of the new private sector management paradigm, ranging from strategic planning to information system implementation. We provide details on the implementation steps, and make suggestions on selecting DoD and contractor teams for implementing a new way for managing the public enterprise.

This paper covers significant material in limited pages. It draws heavily on our personal experiences working for the US DoD. However, it also draws on our experiences in working for private sector organizations, including interviews with senior executives in some of the largest corporations in the world. We begin the discussion by making a case for why the DoD must consider a new approach for enterprise management, and then we move directly to the management and technology models.

2. Change is inevitable

The following quote sets the stage for this section:

> The mission support and services provided to our forces at base level are an extensive business enterprise. This enterprise is on the path to a critical failure unless DoD rethinks installation management. Before we consider making changes at the margin, we need a new lens through which to view our bases (Milnes, 1997).

The consensus is that there is not a coordinated and integrated view of how to manage DoD business processes, with installations being just one example.

We apply the ideas outlined by Milnes (1997) to the entire DoD enterprise. The following items are needed:

- a statement of the purpose for the DoD enterprise;
- a vision of how the future enterprise will look and what it will produce;
- a doctrine for how the enterprise should operate;
- a set of tools for getting the job done efficiently; and
- a plan for reaching the future state.

This paper provides one approach to addressing part of this challenge, but it is important to reiterate that we are only focusing on the business processes. The war-fighting processes are unique, and they cannot be aligned with private sector business processes. Because of their special requirements, private sector approaches to enterprise integration are not directly transferable to the war-fighting processes. The war-fighting processes are not the subject of this paper.

Why is such a rethinking of the defense enterprise so critical at this time? Why not just refine and fine-tune the existing model? These questions are similar to those that were facing private sector enterprises in the late 1980s. In the case of private sector companies, their market shares were decreasing, and they were strapped with inefficient and bloated infrastructures that did not enhance competitive advantage, but required internal funding. The DoD faces a similar situation. Since 1989, the DoD has under-funded many of its support activities. The simple fact is that years of under-funding have led to a wide gap between support requirements and resources. This gap has been estimated to be as wide as $5 billion, just for the installation management process. This leaves few options:

- Make significant cuts in capabilities and infrastructures. This would close the gap, but unfortunately history has shown that it is easier to reduce capability than infrastructure.
- Add additional dollars to close the gap. While it is true that the politicians are already discussing possibilities for spending future budget surpluses, it is unlikely that this alternative would be realized.
- Make cuts in some items, but do some things smarter, so that effectiveness is maintained while cost is reduced.

These are the same alternatives that faced many private sector firms, and the third alternative was the path that was chosen. While all firms did not successfully make the transition, many were successful, and have obtained competitive advantage, while reducing their size and focusing on their core competencies. The open question is the following: Will the DoD enterprise successfully make the transition? Will reductions sacrifice military capability?

3. DoD managers can learn from private sector experiences

It is clear that government is managed differently than the private sector. The performance measures and incentives are distinctly different. There are no public sector performance measurement equivalents for "profitability" and "return-on-investment," and public managers have a special obligation to spend the taxpayers' dollars wisely. However, there are many public sector processes that are equivalent to private sector business processes. These are mundane but necessary processes that are essential for sustaining the enterprise. What is the nature of these processes, and how are they managed? Again, we quote Milnes (1997):

> In all there are over 100 unique business functions that take place on installations to support installation commanders and their tenants. The nature of these base support business functions more closely parallels that of a large commercial enterprise. In the USA, this base support "business" consumes roughly $40 billion annually and manages assets (real estate and facilities) approaching $1 trillion at about 400 installations. Our US installations provide facilities and service to about one million active military, around two million family members, nearly 800,000 civilian employees and one million military retirees. On average, each installation commander is in charge of an activity that services 2,500 active military, 5,000 family members, 2,000 civilian employees, and 2,500 retirees, has assets approaching $2.5 billion, and expends $100 million annually. To manage this business enterprise efficiently, we need a long-term perspective and investment strategy. Currently, though, our installation management parallels our wartime management practices and structure, following established doctrine for near-term engagements without seeing a need for establishing priorities for long-term (multi-year) engagements.

Our assertion is the following. There is nothing special about the management of public organizations that precludes them from implementing modern private sector management practices and integrated information systems. The performance measures and incentives may be different, but the business processes are essentially the

same as the private sector. The need for accurate and timely management information in the public sector is the same as in the private sector. If the processes are the same as the private sector, there is no reason why the information systems that support the processes should not be the same.

If the DoD does not learn from the private sector, how would change occur? The private sector has been experiencing this change for 15 years. The corresponding cost reductions are also finally being documented. There is much that the public enterprise can learn from many of our large private sector enterprises. This paper focuses on smart and modern management methods, enabled by commercial off-the-shelf technology solutions.

4. Management after the millennium

Current DoD management of the mundane business processes is top-down and hierarchical, with many mid-management levels exerting considerable micro-management from above. Some estimate that these non-value-added mid-level management processes account for well over a third of the management activities. With respect to public enterprise management, the analogy shifts to large corporate models that were common in the post-Second World War period. This model is the current approach to managing most public business processes.

As firms moved to new management models, they reduced their management bureaucracies. Figure 1 describes the nature of the reductions that occurred in most US corporations in the late 1980s and early 1990s. Many US organizations found that, due to competitive pressures, growth in their customer-focused value-adding processes was stagnant. However, the overhead and underhead (that is, non-value-added middle management) components continued to grow. The era of reengineering was focused on reducing overhead and underhead, while focusing reclaimed resources on core processes; that is, those processes that add value to the customer (Earl, 1994). Figure 1, through the size of the boxes, reflects the pattern of overhead reduction that the modern organization hopes to achieve over time.

This simple model in Figure 1 was the impetus for most of the corporate reengineering activities of the early 1990s, and the model did not go unnoticed by the DoD. We have written extensively about how these corporate models had much less success in the DoD (Gulledge *et al.*, 1995), and consequently the DoD was facing a management crisis in the late 1990s[1]. The message was presented by Admiral William Owens (retired), the former Vice Chairman of the Joint Chiefs of Staff at a meeting at the Brookings Institution (Owens, 1997). The obverse of Figure 1 captures the essence of the management problem within the DoD. The core is stagnant, and the overhead and underhead burden from higher management levels continues to grow.

5. The management model: why IT-enabled process management?

Process management is as old as the discipline of industrial engineering. Localized implementations of process management (e.g. manufacturing processes, shipping processes, etc.) have been prevalent for years (Grass, 1956). The process management approach involves:

- documenting the process to obtain an understanding of how work flows through the process (elaborate and paper-based "mapping" methodologies were designed for this documentation process (Mullee and Porter, 1956));
- the assignment of process ownership in order to establish managerial accountability;
- managing the process to optimize some measures of process performance; and
- improving the process to enhance product quality or measures of process performance.

In the late 1980s, US manufacturers discovered that the new information technologies allowed managerial control of enterprise-wide process management (Davenport and Short, 1990). The application of business process management in the public sector has been discussed in detail (Gulledge and Sommer, 2002), so that these details are not repeated in this research. We note that process management is a prerequisite for successful implementation of business process-oriented enterprise systems, and refer the reader to the earlier research for the details.

6. Properly aligned and integrated information systems

We use an example from the US Navy to describe why the management model (i.e. business process management) and the information systems model (i.e. enterprise

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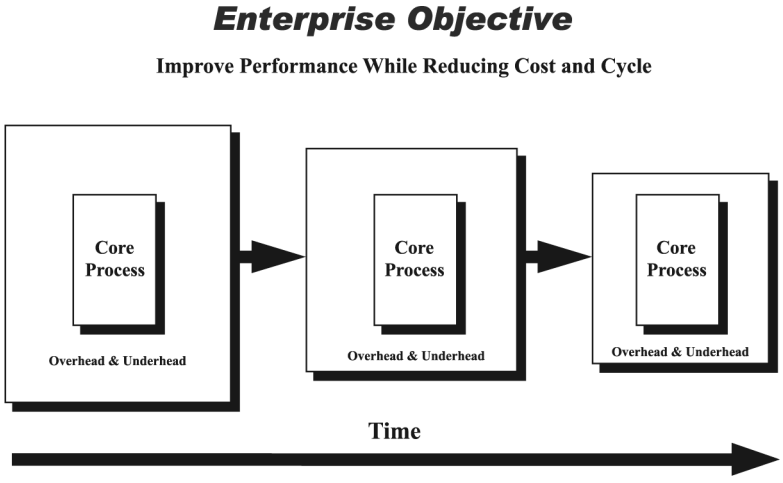
Figure 1
Reduction of overhead and underhead as an enterprise objective



resource planning (ERP) must be aligned. Figure 2 (taken from a Logistics Management Institute briefing) is used as a case study to demonstrate why alignment is so important.

Figure 2 provides one scenario for extracting information from a sequence of stand-alone (i.e. stovepiped) systems to a senior or regional Navy executive. Ignoring the technical issues, the idea is to provide the executive with a "roll-up" of information from various information systems. From the executive's point of view, an information query should be to a single integrated system, as opposed to a number of stand-alone systems. This is a relatively standard presentation, and with this model the executive has better access to information; that is, a query is made to a single system as opposed to searching for information from multiple systems.

Figure 2
Systems to support installation management

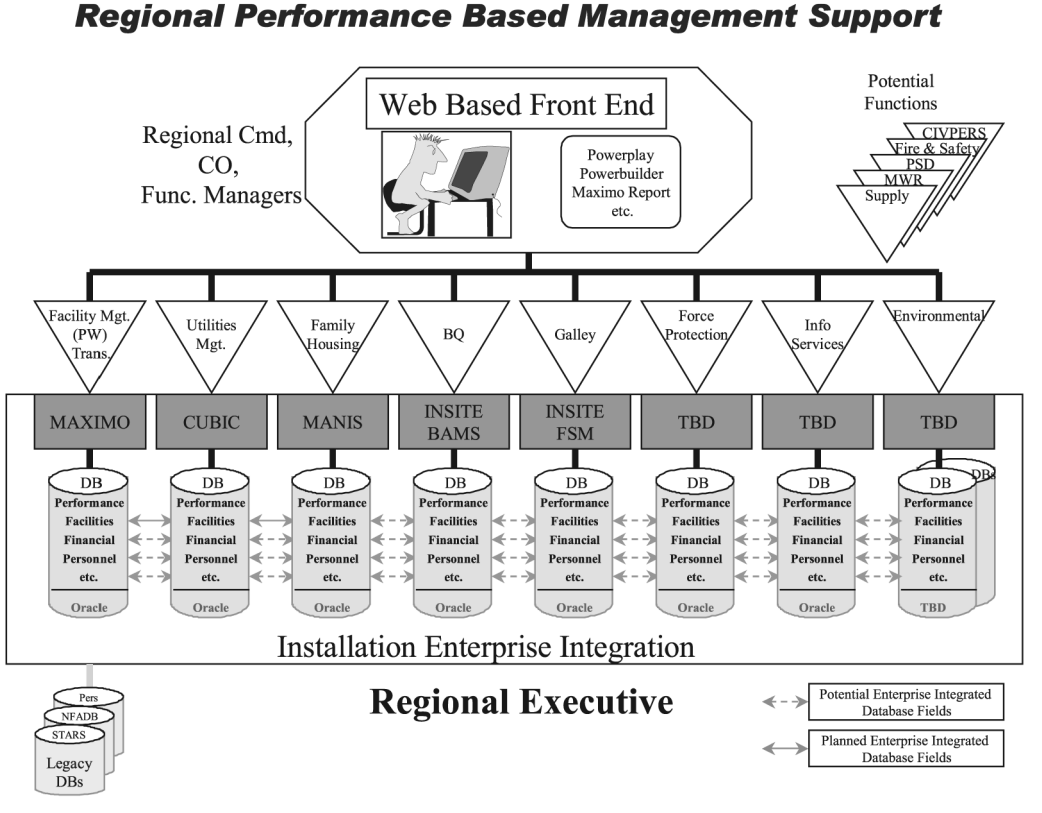


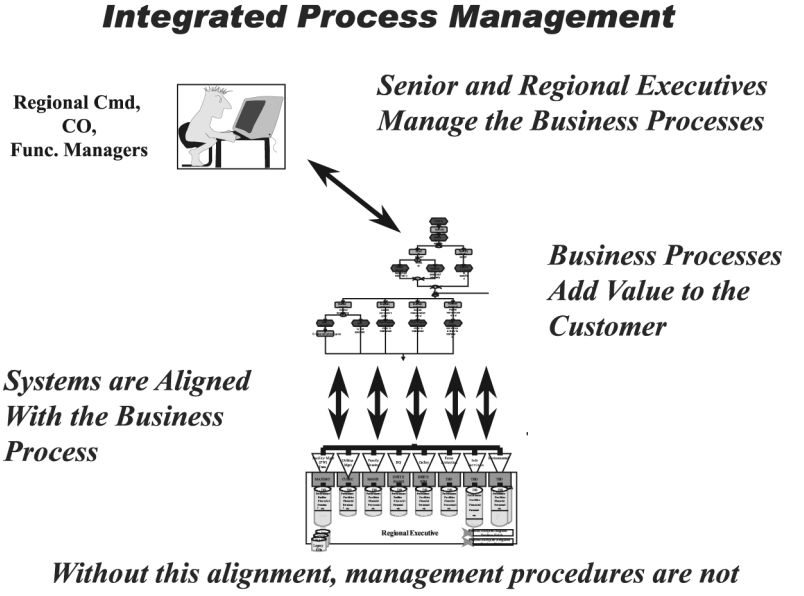
Figure 2 represents a technical solution that is suboptimal because it ignores the business processes that define the executive's management responsibilities. In modern enterprise integration implementations, it is the business process that provides the mechanism for integrating the systems (Scheer, 1994b). That is, the business processes generate organizational outputs and executives are responsible for managing the output creation process. The information systems should align with (i.e. integrate in accordance with) the business processes. This key concept is indicated in Figure 3.

The business processes deliver value to the customer, and the executive's primary objective relates to the delivery of value to the customer. The integrated systems are secondary and subservient; they enable a more efficient and effective delivery of value to the customer. The organization's systems should be integrated around the business process. It is possible to integrate systems without this alignment, but there is no guarantee that these non-aligned systems will add value to the customer.

Organizations that attempt process management without realigning their information systems do not reap the full benefits that process management can deliver. They cannot respond quickly to the customer, and management does not have appropriate information, but these are only the obvious observations.

If organizations maintain their stovepiped systems while attempting business process management, the information owners within the stovepipes stymie effective process management. There is tremendous pressure to revert to hierarchical management practices. However, the reverse is also true. If systems are aligned with processes, then it is much easier to maintain a process-oriented culture. That is, the stovepipe owners have less power, and it is difficult for them to sabotage the process management efforts.

Figure 3
Properly aligned process management model



7. Transition to a modern business process-oriented management model

By 1995 most large private sector companies had shifted from purely hierarchical organizational structures to those that better accommodate horizontal workflows. It was clear that a properly implemented process management model could deliver competitive advantage, and managers were trying to address the critical questions involving strategy and management practice (Garvin, 1995). The most important lesson learned is that it was extremely difficult to implement process management in hierarchically managed organizations (Majchrzak and Wang, 1996). A new management model is required. Having studied the process management implementation in many private sector firms, we have identified the following critical items:

- A strategic plan that contains specific objectives with time-dated targets.
- A business process architecture that documents how organizational processes relate to functions, organizational units, and information flows.
- An implementation plan that aligns information systems with processes, so that managers have the proper information to manage by process.
- A change management plan that guides the transformation from functional to process management.
- A resource plan that can be linked to requirements, and sufficient resources to complete the implementation.

This paper addresses the first three items. The change management plan is not the subject of this paper, but we note that it is a critical item for success, and we adhere to the eight critical steps for success, as presented by Kotter (1995). Without such a plan, the transformation effort is likely to fail.

7.1 The vertically and horizontally integrated business process management model

7.1.1 Vertical integration

Process management requires that senior management activities be focused on core processes as opposed to function. The primary agreement among managers about future courses of action is the strategic plan. The structure of a plan varies but, in general, it contains a future vision, a mission, a set of strategic goals, strategies for achieving the goals, specific objectives, and performance measures. Since business processes cross functional boundaries, business process ownership is an issue; i.e. these boundaries transcend the organizational chart to include political and budgetary boundaries. Objectives define specific targets for function performance. Functions are embedded in cross-functional processes; hence the objectives in the plan must be formally linked to functions. This linkage is indicated in the two upper levels of Figure 4.

The links may seem trivial, but they are not. Complexity arises because there are many nested plans, each with a set of objectives. Without proper documentation, it is difficult to establish managerial accountability. The complex nesting of plans is demonstrated in Figure 5, using a decomposition of DoD installation management plans.

7.1.2 Core process management

> A core business process, as distinct from other processes, is a set of linked activities (i.e. functions) that both crosses functional boundaries and, when carried out in concert, addresses the needs and expectations of the marketplace and drives the organization's capabilities (Johansson *et al.*, 1993, p. 16).

Most DoD functions have been defined at the highest level. This was accomplished in the development and publication of the Department of Defense Enterprise Model. With respect to DoD business functions, the functions need to be linked (via events) to define the processes. Some of these processes will be core, and others will be support. After process engineering, the objectives in the plans should be formally linked to the processes. An example of the linkage is presented in Figure 6.

Figure 6 describes several fundamental process management concepts. First, plans must contain quantifiable objectives, and these objectives are formally linked to processes. The link to processes is accomplished by identifying the functions within the processes that are impacted by a particular objective. This linkage is essential, or one cannot establish accountability or performance measures. If a function does not map to any objective, then that function is a prime candidate for elimination or outsourcing.

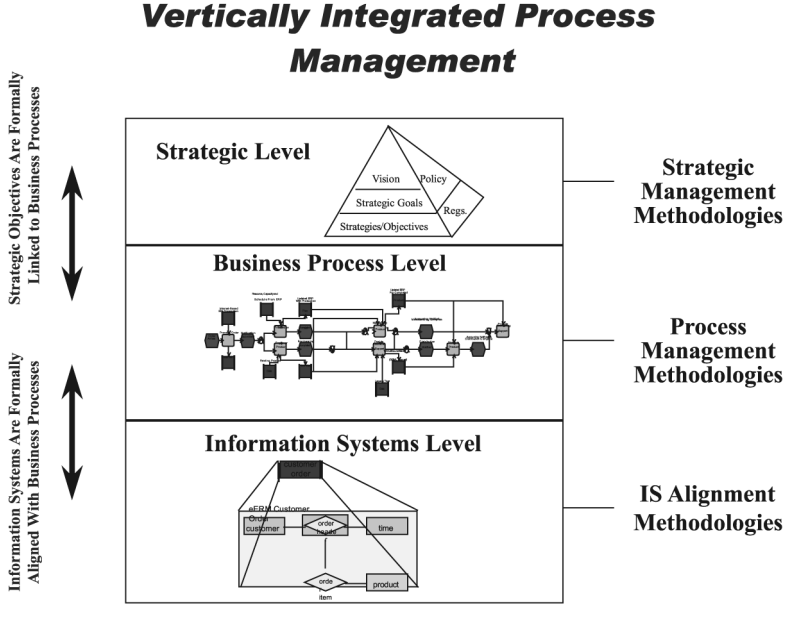
Figures 4-6 capture the basic high-level concepts of business process management by linking planning objectives to core processes. Of course, the mapping is much more complex, because functions are decomposable. An automated documentation tool is required, if for no other reason than configuration management[2].

7.1.3 Horizontal integration

Unfortunately cross-functional enterprise management is more complex than organizing to manage by process. We have discussed these issues elsewhere (Gulledge *et al.*, 1999), and they are critical for understanding the alignment problem. The business processes provide one "view" of a complex organization. Managers must be provided with appropriate process information, or it is difficult to manage by business process. The nature of the problem is apparent from Figure 7. We use the installation management example to demonstrate the point.

The various installation management functions are currently supported by stand-alone information systems. These information systems provide support to specific domains, such as "utilities management" or "family housing" in Figure 7. The "utilities management" system is neither integrated nor interoperable with the "family housing" and "environmental

Figure 4
Vertically linked process management model



management" systems. Efficient and effective management of the "installation management" core process requires that a single system should support the cross-functional process. Otherwise, process management is difficult if not impossible. Private sector organizations understand this premise clearly – in order to manage by business process, the organization's information systems must be aligned with the process. The aligned situation is presented in Figure 8.

This critical point about business process management was uncovered in our interviews with Eastman Chemical Company, where we encountered precisely this problem. After reorganizing the corporation with a focus on process and extensive process engineering, the company realized that it could not reap the full benefits of the change without implementing a new information system that supports the newly engineered processes. After a two-year effort, the integrating system was implemented. After many years of implementation experience, we do not believe that the Eastman experience is that unusual.

The single information system provides the public sector manager with complete information about the business process through a single query to the process-aligned system. The concept is simple, but the implementation can be quite complex. The next section discusses two ways that have been used in the private sector to achieve process-alignment of information systems, while maintaining and productively using legacy systems.

Figure 5
Example of the nesting of plans

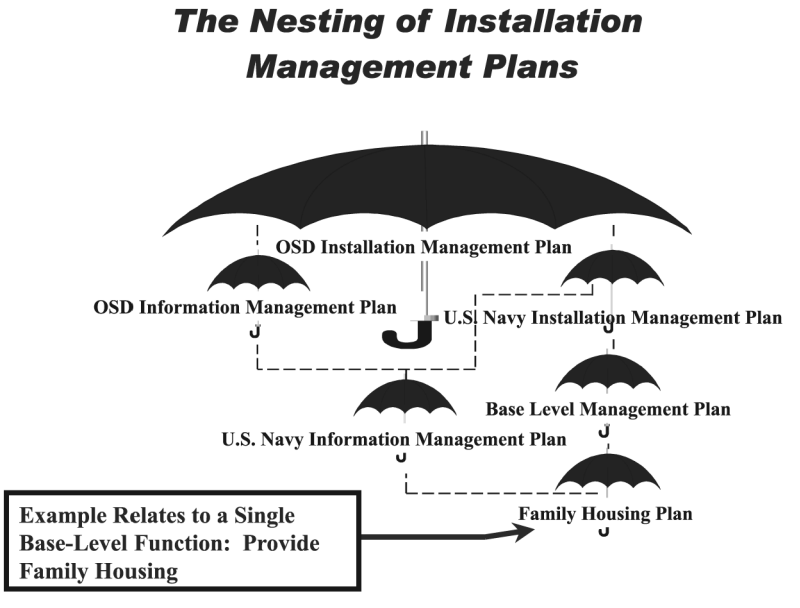
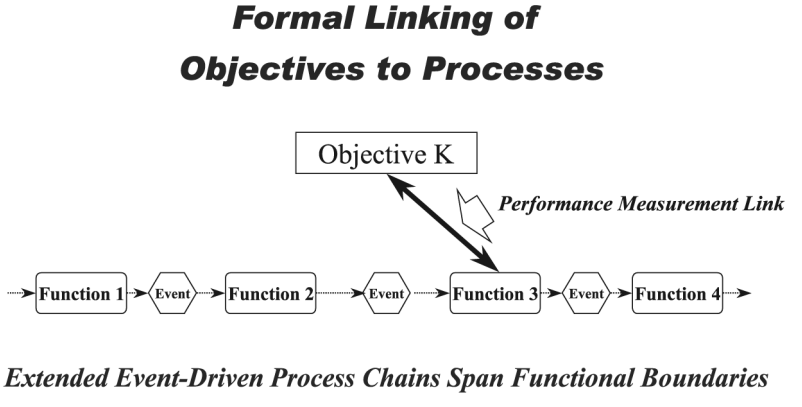


Figure 6
Linking plans to processes



7.1.4 Information system realignment

The alignment of information systems with cross-functional processes in order to meet strategic organizational objectives has been a major topic in the literature in recent years. The design and implementation of a new system will provide alignment, but this is typically infeasible. It is too risky and costly. Two approaches to achieving alignment are discussed in the following sections.

7.1.5 Brokered systems (integration without a business process focus)

Consider the model in Figure 9, which continues to receive considerable attention in private sector organizations.

The approach in Figure 9 maps data elements through a separate architecture tier that is called a broker. The logic is simple. Since data standardization is difficult to achieve, direct legacy system alignment is difficult to implement. The "broker" draws information from the legacy systems, maps data elements, and distributes information to the users. From the user's point of view, the interaction is with a single system that provides information about all functions.

If this approach is implemented through a Web server and client browsers, it is the familiar client-server model of the World Wide Web. Those with experience in implementing these types of architectural models will attest to the fact that the implementation can be complicated. An integrated enterprise model is essential, and legacy wrapping (Winsberg, 1995; Aronica and Rimel, 1996) may be required.

Figure 7
Process management with stovepipe systems

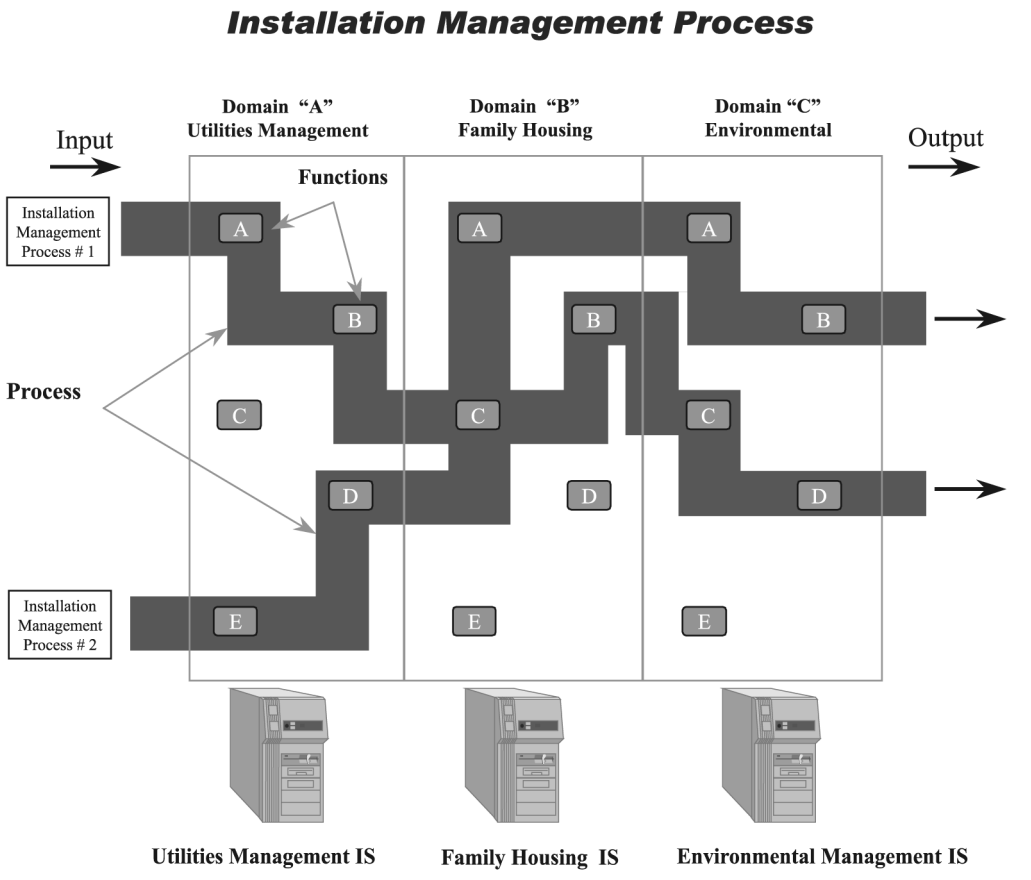
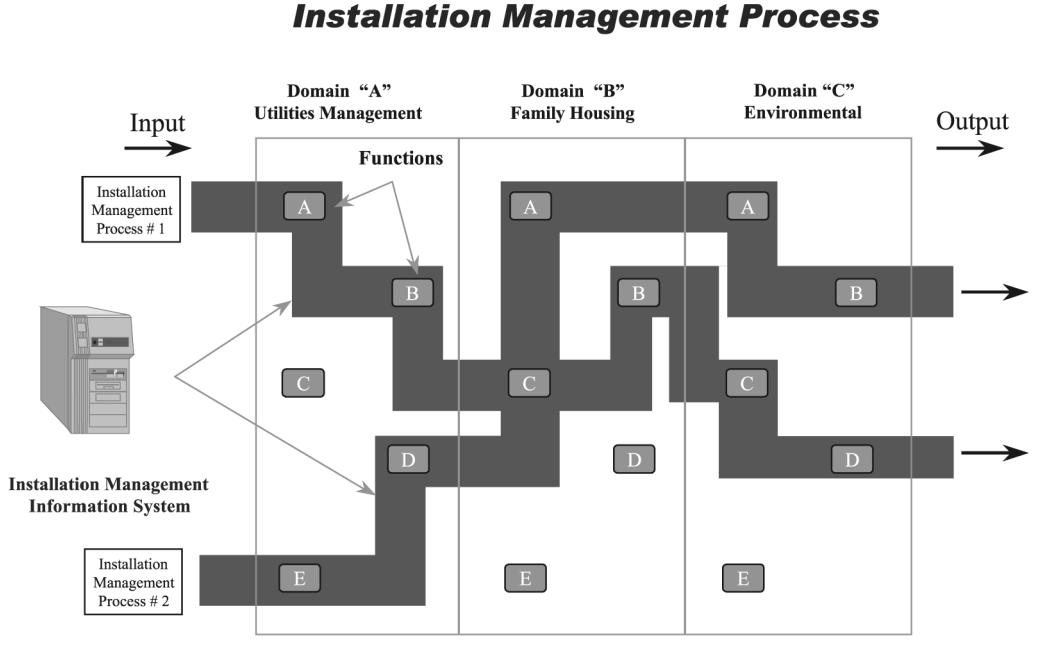


Figure 8
Installation management with process-aligned information systems



8. Standard software solutions through reference models (ERP systems)

This approach has proven successful in the private sector and, in our opinion, should be considered by the DoD. As previously mentioned, proprietary development and implementation of integrated systems are costly and risky. The radical approach of Hammer and Champy (1993) proved to be very difficult and costly to implement in organizations. Reengineering was difficult, but the investment costs for new systems and technologies to support the reengineered processes were often staggering.

By the mid-1990s, the approach taken by most private sector organizations to reengineering was to purchase preengineered and integrated software products called "standard software solutions". The generic term for standard software solutions used in industry circles is ERP systems. The world's largest supplier of standard software solutions is SAP AG, and a detailed examination of SAP's R/3 client/server standard software solution may be found in Buck-Emden and Galimow (1996) or Bancroft (1996). Keller and Teufel (1998) discuss the process-oriented implementation issues of R/3. Other useful references are provided by Gupta (2000), Rao (2000), Hong and Kim (2002), and Willis and Willis-Brown (2002).

In some sense, the implementation of a standard software solution is the antithesis of reengineering. The software is implemented, and the implementing firm alters (i.e. engineers) its business processes to agree with the reference business processes (and dataflows by default) that define the standard software. That is, the first rule of reengineering is: focus first on business process, and then search for enabling technologies. The implementation of a standard software solution requires the opposite. The business processes that are supported by the software are implemented, and the organization's business processes are altered to agree with the software.

This approach, which uses reference process, data, and function models, is appropriate for generic business processes. For example, every company has a slightly different procurement process, but basically they all do the same thing. Hence, if the reference model implied by the standard software meets 80 per cent of required functionality, it is more cost-effective to alter internal business processes to agree with the reference model than to design, develop, and implement a proprietary system that meets 100 per cent of required functionality. Hence, one can see that reference models are not appropriate for many types of processes. From the perspective of the providers of standard software solutions, they are appropriate for processes that occur in many organizations.

8.1 Public sector example

Since every defense installation has similar business processes, installation management would seem to be a good candidate for reference model implementation. The management of facilities is slightly different at every installation, but there is significant overlap in required functionality. It is probably more cost-effective for the DoD to achieve information system alignment through the development and implementation of DoD-wide reference models, as opposed to service- or agency-specific proprietary solutions. These concepts are explained using Figure 10.

Figure 10 shows how the reference model would be applied. The lower level of the Figure indicates the basic reference model. This model integrates all common installation management functions. It is based on the concept of a generic base. Since all bases are not the same, there will be installation-specific modules, similar to industry solutions in the private sector. For example, there may be inherent differences in Air Force versus Navy installations. Finally, there may be specific tailoring at the installation level. The top level of Figure 10 indicates this. The idea is simple: if the reference model captures 80 per cent of the required functionality, then there you can save many hours of "reinventing the

Figure 9
An information broker approach to legacy system alignment

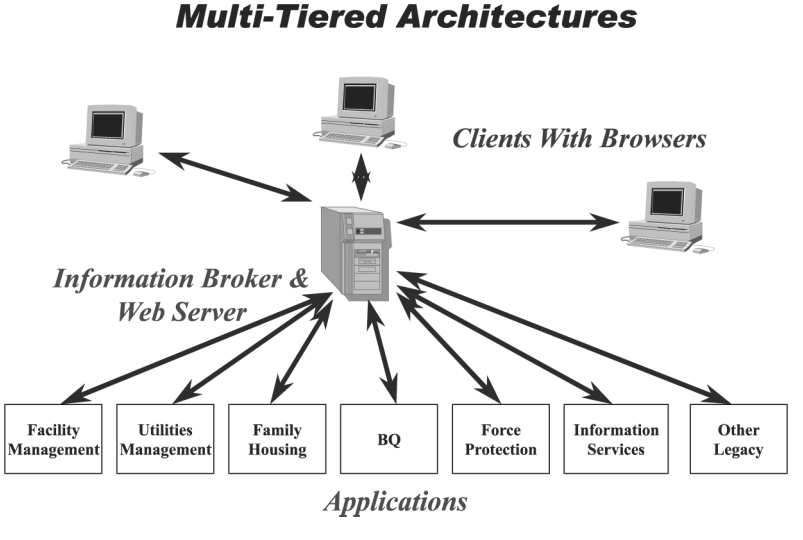
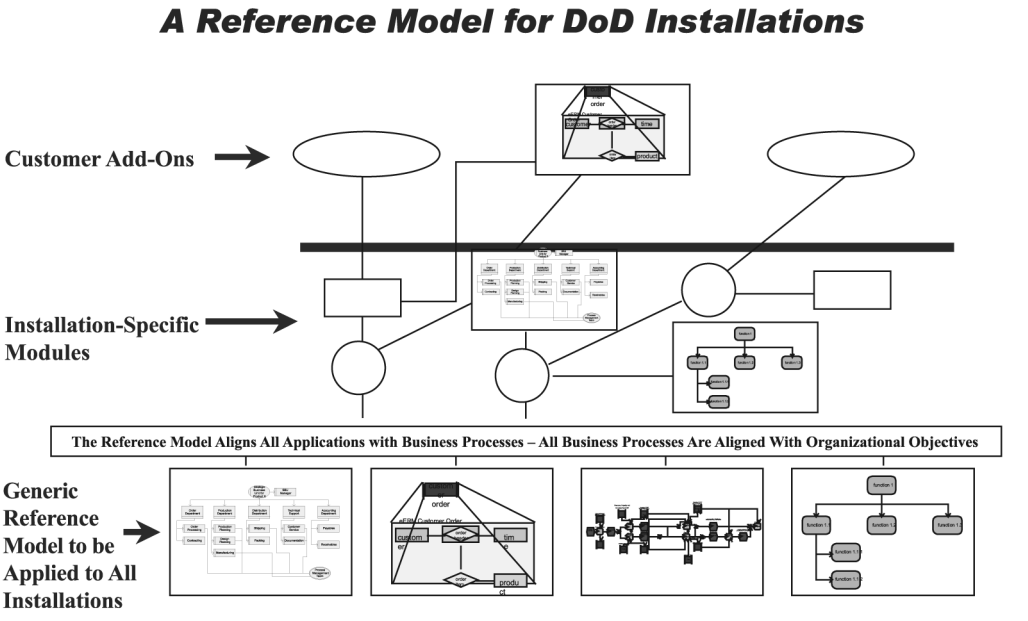


Figure 10
Reference models for installation management



wheel" by developing and implementing different system configurations across installations.

The large gains from reference models come from the reuse of data models; i.e. it takes much more time and effort to develop data models than function or business process models. Reference data models are defined by Hars (1994) as a general industry-oriented conceptual data model. Specifically, the models represent a generic description of an organization's generally applicable structures (such as order processing, bill of materials) that are typical for a specific industry. Information on an organization's data knowledge is stored in module libraries that are then used as building-blocks for efficient databases.

Reference models offer the organization a means of storing and controlling data through the use of rigorous standards, which reduce erroneous data, inconsistent terms and provide a consistent semantic structure. Furthermore, data models can be used to identify areas of organizational improvement, because the analysis required to generate the model will often show deficiencies in related business processes.

Of course, the reference models must be developed, and the associated standard software must be developed once, and then implemented at every DoD location with similar business processes. The savings are obvious, and the DoD should consider methodologies that have been used to successfully develop large private sector reference models.

8.2 Developing reference models for the DoD

For reference model development, we describe a methodology called the Architecture of Integrated Information Systems (ARIS) (Scheer, 1993, 1994a, 1999a, b). This methodology can be used to define the requirements for reference models for any of the major standard software solution vendors, and it was originally used to develop the SAP reference models. The methodology is supported by an automated toolset that automates the C4I/SR Architectural Framework (US Department of Defense, 1997). It also supports business process-oriented ERP implementations from reference models (Scheer, 1994b).

Most modern information system planning approaches argue for decomposing the organization into "views." Some views are in the domain of managers (for example, organization and function) and others are in the domain of technologists (for example, data). These views are modeled separately, and then reassembled (that is, integrated) to form an integrated model of the organization. This documented set of organizational views is called an integrated enterprise model. Scheer (1999a, b) accomplishes the modeling objective by considering multiple views:

- *Organizational view.* This represents the user and/or organizational units, which exist to perform work within an organization.
- *Functional view.* This represents functions that are performed (and their relationships) along with a detailed description of the total function hierarchy.

- *Data view.* This represents the conditions and events that exist when data are updated with a data-processing environment.
- Process/control view. This represents the relationships that exist between the views and the synchronization of their combined information flows.

Other methodologies advocate slightly different views, but the concepts are the same.

We omit the details of the reference model development for this concept paper, but we offer the following suggestion for how the reference model would align existing installation information systems with the newly defined and documented business processes. Figure 11 is used to aid the discussion.

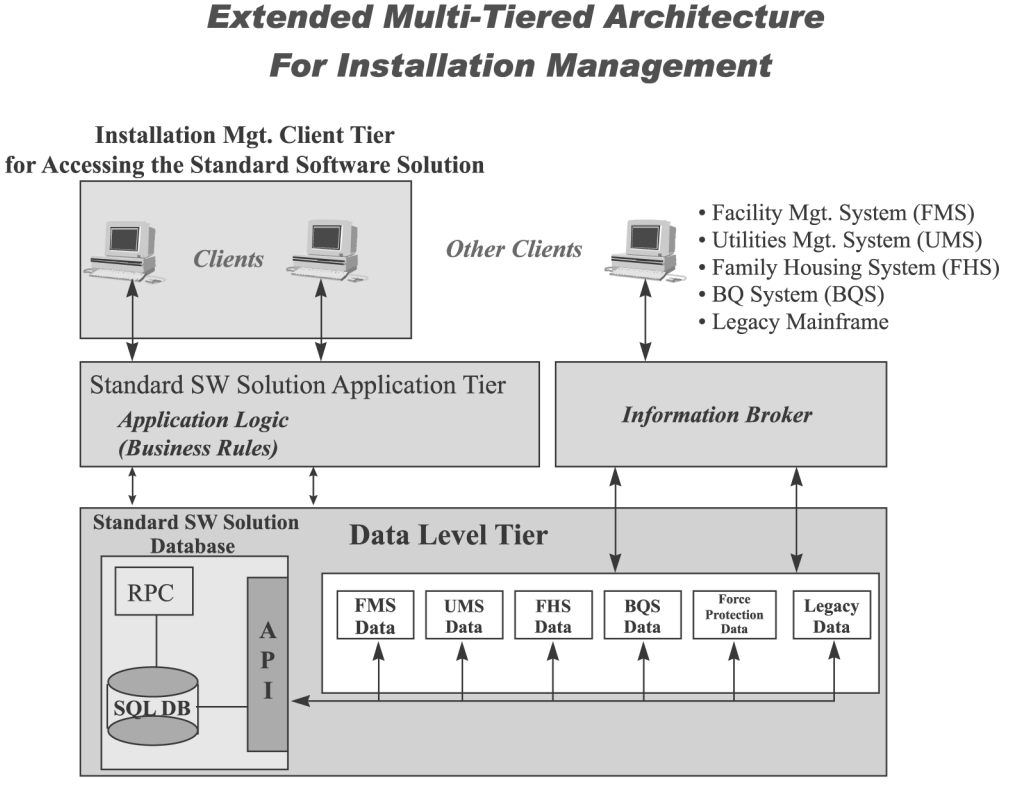
Figure 11 presents an architecture that private sector organizations have used to integrate legacy applications with standard software solutions. Users query the system through the standard software solution. These users are the upper-left clients in Figure 11. If the users need information from the various stand-alone systems (lower right section of Figure 11), the transfer occurs through proprietary APIs at the application (or database) level.

There may be intense users (i.e. data creators) for the stand-alone systems. These users require direct access to the stand-alone systems, as indicated in the upper right section of Figure 11. Direct access is required for performance reasons, and the access is directly through the broker. The private sector analogy might involve linking the organization's ERP system (i.e. the standard software solution) to the product data management system, the enterprise document management system, the procurement execution system, etc. The power users of the product data management system, for example, would require direct access to that system.

8.3 Developing and implementing reference models for the public enterprise

This section contains a discussion of all tasks that must be completed in order to plan for implementation, develop the reference model, and monitor contractor performance in the implementation of the standard software solution. The strong recommendation to the DoD is to define the requirements using contractors who have experience in requirements definition-level modeling for enterprise integration. Then, the project should be completed by a company or companies that have actually designed and built reference models for large private sector implementations; e.g. SAP, Baan, Oracle, etc.

Figure 11
Installation management enterprise architecture



The following steps provide a rough outline of how the effort should proceed. It follows many of the ideas that were introduced by Kirchmer (1998):

1 Begin the following items simultaneously:
   - assemble all strategic plans; and
   - review all existing rules and regulations, using the original legislation as a base line.
2 Develop the high-level function and organizational views (use the C4I/SR Architectural Framework as a guide).
3 Integrate the function and organization views around core processes.
4 Link the objectives in the strategic plans to the functions that are embedded in the core processes, and document using objective diagrams, a modeling methodology that is included in the ARIS Toolset.
5 At this point, the highest business process management level is completed, as are three views of the integrated enterprise model.
6 Request permission to continue under new rules of process ownership.
7 Reconcile regulatory review with enterprise model and suggest changes in regulations.
8 Develop data view at the cluster level and run gap analysis.
9 Generate requirements for the standard software solution reference model.
10 Develop architecture for integrating existing legacy applications.
11 Write SOW to be targeted to a contractor who has actually developed standard software solution reference models.
12 Evaluate proposals and ensure that the contractor captures all requirements in the development plan.
13 Monitor development of the reference models.
14 Develop a second RFP for a contractor to implement the reference models.
15 Monitor the implementation, using implementation performance measures and management practices that have been used by large private enterprises that have implemented reference models in their organizations.
16 Evaluate the implementation and plan for the implementation of the reference models at other DoD organizations.

9. Conclusions

This paper focuses on new ways of managing public enterprises. New methods are essential for a number of reasons. The primary reason is that, in the absence of new methods, it is unlikely that our leaders will be able to reduce infrastructure while increasing effectiveness. There seems to be general agreement that a tweaking of the old model is not appropriate, since it is unlikely to deliver the desired results. This paper argues for the implementation of private sector methods that have been successfully implemented in most large Western corporations.

We argue that there is nothing special about public sector business processes that insulate them from modern private sector management methods. The model that is proposed is integrated and information technology-enabled process management. The paper suggests a combination of a process management model with private sector process-aligned standard software solutions. This approach has been effectively used by most of the largest US corporations.

Hence, the paper focuses on the interaction between organizational processes and the new information technologies. Integrated information systems are desirable, but they are effective when they enable the organization's value-adding processes. The business process forms the basis for integration, with the organization's system integrated in such away that it is aligned with the process. Process-aligned information systems help to create a culture that enables process management.

We provide sufficient detail to define a high-level plan for a project to transition a public organization to the process-aligned enterprise. We explain modern private sector approaches for achieving enterprise integration, including both vertical and horizontal integration. We also show how the technology model aligns with the management model, and discuss the implications for implementing such a model in an example, using the DoD Installation Management enterprise. Finally, we outline the steps for implementing a project, following standard private sector implementation practices, within a particular public enterprise.

Notes

1 There were also many reengineering implementation problems in the private sector. A good summary of the issues is provided by Drago and Geisler (1997).
2 Luo and Tung (1999) discuss some of the issues surrounding the selection of methodologies and tools.

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